

Application No. 10/538,545
Paper Dated: April 15, 2008
In Reply to USPTO Correspondence of January 15, 2008
Attorney Docket No. 3135-051782

REMARKS

Introduction

This Amendment is responsive to the January 15, 2008 Office Action. In the Office Action, claims 18-34 stand rejected. Claim 18 has been amended to correct a typographical error. Claims 32-34 have been cancelled. Claims 35-37 have been added. Support for the new claims can be found in Figs. 1A-3 of the originally-filed drawings. Claims 18-31 and 35-37 are now pending.

Oath/Declaration

The Office Action has objected to the declaration for containing non-initialed and non-dated alterations to the declaration. Specifically, the Office Action asserts that the date next to the signature of the Applicants has been altered without initialing and dating the change. Applicants hereby submit a supplemental declaration with this Amendment to attend to this deficiency. Reconsideration and withdrawal of this objection are respectfully requested.

Objection to the Drawings

The Office Action has objected to the drawings for not showing every feature specified in the claims. In particular, the Office Action has asserted that the features of claims 27, 32, 33, and 34 must be shown in the drawings or removed from the claims.

With regard to claim 27, Applicants respectfully submit that the drawings currently show the feature where “the edge of the cutting opening on the side remote from the side supporting the material layer is sharp”. For example, as shown in Fig. 1A, the edge of the cutting opening (6) is sharp as illustrated by the cross-sectional shape of the cutting plate (3). Furthermore, Applicants submit that the feature of a sharp edge of the cutting opening does not lend itself to illustration anymore than what is already shown.

With regard to claims 32-34, Applicants have cancelled claims 32-34 obviating the need to show such features in the drawings.

Reconsideration and withdrawal of these objections are respectfully requested.

Rejections Under 35 U.S.C. §102 and 35 U.S.C. §103

Claims 18-30 and 34 stand rejected under 35 U.S.C. § 102(b) for anticipation

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by U.S. Patent Application Publication No. 2001/0020409 to Hashimoto et al. Claims 29-31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hashimoto in view of JP 07-132497 to Isamu. Claims 32-34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hashimoto alone.

The present invention, as defined by claim 18, is directed to a method for releasing a slug adhering to a stamp in a punching machine, by carrying the stamp, after performing a punching operation on a sheet material, with the active stroke at least partially through a cutting opening in a cutting plate supporting the sheet material, and carrying the stamp during the return stroke back again through the cutting opening in the cutting plate which close-fittingly encloses the stamp, wherein the cutting opening functions during the return stroke such that the side of the cutting plate remote from the sheet material engages around the cutting opening as a scraping edge on the slug adhering to the stamp and releases it from the stamp.

Further, the present invention, as defined by claim 25, is directed to a punching machine for releasing a slug adhering to a stamp, including a cutting plate provided with at least one cutting opening, and at least one stamp for linear intermittent displacement which is displaceable between a position in which the cutting opening in the cutting plate is left clear by the stamp and a position in which the stamp is carried through the cutting opening. The stamp passes close-fittingly through the cutting opening of the cutting plate, where the cutting opening in the cutting plate has a scraping edge for releasing the slug adhering to the stamp.

The Hashimoto reference discloses a punch unit (1) for processing soft metal sheet having a punch (2) reciprocally driven in a punching operation and a die or cutting plate (3) cooperating with the punch (2) for punching a hole in a sheet. The unit (1) is provided with a cleaning means for removing a fragment of the soft metal sheet from the punch. The cleaning means includes the cutting sheet (3) provided with a cutting opening (cutting edge portion (3a)) having a plurality of connecting bores (see Fig. 4: d3, d4). As shown in Fig. 6, Hashimoto discloses that the cutting opening (cutting edge portion) includes two successive phases ('a' and 'b'), where phase 'b' is tapered from 'a' to a larger diameter.

The Isamu reference is relied upon in the Office Action to teach the features of claims 29-31 relating to the use of a plurality of cutting plates releasably connected to the punch plate.

The shape of the cutting opening Hashimoto cannot be considered as a scraping edge for removing a fragment of the soft metal from the punch according to the present invention. With the tapered shape of the cutting opening in Hashimoto, the fragments of the soft metal will get stuck in the cutting opening regularly. The Hashimoto patent, obviously aware of this problem, teaches to prevent fragments of the soft metal sheet from sticking to the punch by: coating the punch with a coating (page 4, paragraph 59); applying a lubricant to the punch (page 4, paragraph 55); providing a punch where a cutting edge portion (2a) of the punch (2) assumes a circularly-curved shape (page 4, paragraph 58), and by a radial clearance between the punch and the die set at a value of 5 to 10 μm (page 4, paragraph 63). Thus, it is clear that Hashimoto fails to teach or suggest a scraping edge as defined in claims 18 and 25.

Further, claim 18 provides that the side of the cutting plate remote from the sheet material engages around the cutting opening as a scraping edge during the return stroke of the stamp. On the contrary, Hashimoto discloses that clearing the punch is carried out while the punch performs its lost motion (page 5, paragraph 70). For instance, Hashimoto states that “the punch 2 performs its lost motion three times to remove the fragment of the soft metal sheet having stuck to the punch 2 ...”. Therefore, the Hashimoto patent fails to disclose a cutting opening functioning as a scraping edge during the return stroke of the stamp.

As noted above, Hashimoto discloses a cutting opening (cutting edge portion (3a)) having a plurality of connecting bores (see Fig. 4: d3, d4) and a cutting edge portion (2a) of the punch (2) having a circularly-curved shape (page 4, paragraph 58). Such features fail to meet the limitations of claims 35 and 36 providing that the cutting opening of the cutting plate has a uniform diameter and the cutting edge of the stamp has a substantially flat profile, respectively.

New claim 37, as shown in an alternative embodiment illustrated in Fig. 2, provides that an entire edge of the cutting opening on the side remote from the side supporting the material layer forms an angled planar surface with respect to a cutting edge of the stamp. As noted in the specification at page 3, lines 8-15, the angled planar surface allows the slug to be released from the cutting plate only over a substantial part of the periphery of the slug so that repositioning of the slug relative to the stamp is prevented. Preventing the repositioning of the slug reduces the chance that the slug will be carried back

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to the cutting plate or sheet material. Although Hashimoto discloses an angled surface below 3b, as shown in Fig. 4, Hashimoto fails to disclose where the entire edge of the cutting opening on the side remote from the side supporting the material layer forms an angled planar surface with respect to a cutting edge of the stamp

Further, claims 19-24, 26-31, and 35-37 depend from and add further limitations to either independent claim 18 or 25. Thus, claims 19-24, 26-31, and 35-37 are deemed to be in condition for allowance for all of the reasons set forth hereinabove.

In view of the foregoing amendment and comments, Applicants respectfully request reconsideration of the rejections of claims 18-31 and allowance of the same. Applicants also respectfully request the allowance of new claim 35-37.

Should the Examiner have any questions regarding this information or wish to discuss this matter in further detail to advance prosecution, the Examiner is invited to contact Applicants' undersigned representative by telephone at the number provided below.

Respectfully submitted,

THE WEBB LAW FIRM

By _____



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